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 NEWS  1          Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2  Apr 08  "Ask CAS" for self-help around the clock
 NEWS  3  Apr 09  BEILSTEIN: Reload and Implementation of a New Subject Area
 NEWS  4  Apr 09  ZDB will be removed from STN
 NEWS  5  Apr 19  US Patent Applications available in IFICDB, IFIPAT, and
IFIUDB
 NEWS  6  Apr 22  Records from IP.com available in CAPLUS, HCAPLUS, and
ZCAPLUS
 NEWS  7  Apr 22  BIOSIS Gene Names now available in TOXCENTER
 NEWS  8  Apr 22  Federal Research in Progress (FEDRIP) now available
 NEWS  9  Jun 03  New e-mail delivery for search results now available
 NEWS 10  Jun 10  MEDLINE Reload
 NEWS 11  Jun 10  PCTFULL has been reloaded
 NEWS 12  Jul 02  FOREGE no longer contains STANDARDS file segment
 NEWS 13  Jul 22  USAN to be reloaded July 28, 2002;
                  saved answer sets no longer valid
 NEWS 14  Jul 29  Enhanced polymer searching in REGISTRY
 NEWS 15  Jul 30  NETFIRST to be removed from STN
 NEWS 16  Aug 08  CANCERLIT reload
 NEWS 17  Aug 08  PHARMAMarketLetter(PHARMAML) - new on STN
 NEWS 18  Aug 08  NTIS has been reloaded and enhanced
 NEWS 19  Aug 09  JAPIO to be reloaded August 18, 2002

 NEWS EXPRESS  February 1 CURRENT WINDOWS VERSION IS V6.0d,
               CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
               AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
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FILE 'HOME' ENTERED AT 11:36:19 ON 09 AUG 2002

=> file .gary
COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION
FULL ESTIMATED COST | 0.21 | 0.21

FILE 'MEDLINE' ENTERED AT 11:36:29 ON 09 AUG 2002

FILE 'CANCERLIT' ENTERED AT 11:36:29 ON 09 AUG 2002

FILE 'BIOSIS' ENTERED AT 11:36:29 ON 09 AUG 2002

FILE 'EMBASE' ENTERED AT 11:36:29 ON 09 AUG 2002

FILE 'SCISEARCH' ENTERED AT 11:36:29 ON 09 AUG 2002

=> s op1 or op-1 or hop1 or hop-1 or bmp7 or bmp-7
L1 2743 OP1 OR OP-1 OR HOP1 OR HOP-1 OR BMP7 OR BMP-7

=> s l1 and (angiogen? or neovascu?)
L2 32 L1 AND (ANGIOGEN? OR NEOVASCU?)

=> dup rem l2
PROCESSING COMPLETED FOR L2
L3 9 DUP REM L2 (23 DUPLICATES REMOVED)

=> d ibib abs 1-9

L3 ANSWER 1 OF 9 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 2002101807 MEDLINE
DOCUMENT NUMBER: 21676532 PubMed ID: 11818390
TITLE: Change in full-field ERGs after macular translocation surgery with 360 degrees retinotomy.
AUTHOR: Terasaki Hiroko; Miyake Yozo; Suzuki Toshimitsu; Niwa Takashi; Piao Chang-Hua; Suzuki Satoshi; Nakamura Makoto; Kondo Mineo
CORPORATE SOURCE: Department of Ophthalmology, Nagoya University School of Medicine, Nagoya, Japan.. terasaki@med.nagoya-u.ac.jp
SOURCE: INVESTIGATIVE OPHTHALMOLOGY AND VISUAL SCIENCE, (2002 Feb) 43 (2) 452-7.
Journal code: 7703701. ISSN: 0146-0404.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200202
ENTRY DATE: Entered STN: 20020209
Last Updated on STN: 20020215
Entered Medline: 20020214
AB PURPOSE: One of the methods used in macular translocation (MT) surgery for subfoveal **neovascularization** is to create a temporary total retinal detachment followed by a 360 degrees retinotomy. The whole retina is then shifted from the original surface of the retinal pigment epithelium (RPE), resulting in an unusual retina and RPE complex. The

purpose of this study was to assess retinal function after MT surgery. METHODS: Full-field electroretinograms (ERGs) were recorded before and 4 to 8 months (mean, 5.4 months) after MT surgery with a 360 degrees retinotomy in 15 consecutive patients with age-related macular degeneration (10 eyes), high myopia (4 eyes), and polypoidal choroidal vasculopathy (1 eye). Their ages ranged from 57 to 74 years. The angle of rotation of the retina ranged from 18 degrees to 45 degrees (mean +/- SE, 30 +/- 2 degrees). In addition to the recording of the standard rod and mixed rod-cone ERGs after 30 minutes of dark adaptation, the cone single flash and 30-Hz flicker ERGs were recorded immediately after a light-adapting background was turned on (LA(0)) and also after 10 minutes of light adaptation (LA(10)). RESULTS: The mean amplitude of the full-field ERGs was reduced after surgery by 44% for the rod response, by 24% for the mixed rod-cone b-wave, by 12% and 35% for the cone single-flash b-wave at LA(0) and 30-Hz flicker ERGs at LA(0), respectively. The mean implicit times were delayed by 8 msec for the rod response, by 2 msec for the mixed rod-cone oscillatory potential (**OP1**), by 4 msec for the cone single-flash b-wave at LA(0), and by 6 msec for the 30-Hz flicker at LA(0). CONCLUSIONS: These results demonstrated a functional alteration in both the rod and cone components of the ERGs for the entire retina after MT surgery.

L3 ANSWER 2 OF 9 MEDLINE DUPLICATE 2
ACCESSION NUMBER: 2001102436 MEDLINE
DOCUMENT NUMBER: 20544842 PubMed ID: 11090449
TITLE: Detection of multiple bone morphogenetic protein messenger ribonucleic acids and their signal transducer, Smad1, during mouse decidualization.
AUTHOR: Ying Y; Zhao G Q
CORPORATE SOURCE: Department of Pathobiology, University of Missouri College of Veterinary Medicine, Columbia, Missouri 65211, USA.
CONTRACT NUMBER: HD 36218 (NICHD)
SOURCE: BIOLOGY OF REPRODUCTION, (2000 Dec) 63 (6) 1781-6. Journal code: 0207224. ISSN: 0006-3363.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010126

AB Decidualization is a process characterized by morphological and functional changes in the uterine stromal cells. In addition to steroid hormones, growth factors are implicated in this process. Using in situ hybridization, we found that mRNAs for several bone morphogenetic proteins (BMPs) were detected in the decidual and vascular endothelial cells. The **Bmp7** mRNA was detected in the decidualizing stromal cells surrounding the blastocyst and distributed in a gradient, with the highest levels occurring near the uterine epithelium at 4.5 days post-coitus (dpc). With the progression of decidualization, **Bmp7** signals in the deciduum at the antimesometrial side decreased, but strong signals were retained in the decidual area at the mesometrial side at 7.0 dpc. In contrast, Bmp8a transcripts increased from 5.5 to 7.0 dpc in the decidual tissue, with the highest levels occurring in the secondary decidual zone at the antimesometrial side. The Bmp2, Bmp4, and Smad1 transcripts were found in the secondary decidual zone, especially at the mesometrial side.

The Bmp2 signals were primarily detected in decidual cells, whereas Bmp4 and Smad1 transcripts were mainly detected in vascular endothelial cells, suggesting that they may be involved in decidual **angiogenesis**.

L3 ANSWER 3 OF 9 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 2000259014 MEDLINE
DOCUMENT NUMBER: 20259014 PubMed ID: 10801076
TITLE: Induction of endochondral bone formation by recombinant human transforming growth factor-beta2 in the baboon (Papio ursinus).
COMMENT: Comment in: Growth Factors. 2001;18(4):319-20
AUTHOR: Ripamonti U; Crooks J; Matsaba T; Tasker J
CORPORATE SOURCE: Bone Research Laboratory, Medical Research Council/University of the Witwatersrand, Medical School, Johannesburg, South Africa.. 177RIPA@chiron.wits.ac.za
SOURCE: GROWTH FACTORS, (2000) 17 (4) 269-85.
Journal code: 9000468. ISSN: 0897-7194.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200007
ENTRY DATE: Entered STN: 20000720
Last Updated on STN: 20020510
Entered Medline: 20000710

AB Members of the transforming growth factor-beta (TGF-beta) superfamily, the bone morphogenetic and osteogenic proteins (BMPs/OPs) but not the TGF-beta proteins themselves, induce endochondral bone formation in vivo, when implanted in extraskeletal heterotopic sites of rodents. Here we show that recombinant human TGF-beta2 (hTGF-beta2) induces endochondral bone formation 30 days after implantation in heterotopic intramuscular sites of the baboon (Papio ursinus) at doses of 1, 5 and 25 microg per 100 mg of guanidinium-inactivated collagenous bone matrix as carrier. On day 90 there was generation of large radiopaque and corticalized intramuscular ossicles. Five and 25 microg hTGF-beta2 induced large ossicles in the rectus abdominis of the primate as evaluated by key parameters of bone formation, including generated tissue area, mineralized bone and osteoid volumes, and tissue alkaline phosphatase activity. On day 30 and 90 after healing, hTGF-beta2 also induced bone formation when implanted in the rectus abdominis in conjunction with a sintered porous hydroxyapatite as carrier. mRNA expression in tissues from heterotopic specimens showed **OP-1** (**BMP-7**) and BMP-3 transcripts in low abundance and with a linear dose-dependent increase both in collagenous matrix and hydroxyapatite samples. Type IV collagen mRNA expression, a marker of **angiogenesis**, was stronger in collagenous than hydroxyapatite samples. Growth and differentiation factor-10 (GDF-10) mRNA transcripts were expressed in ossicles with a distinctly chondrogenic phase, but its expression was greater in ossicles generated in porous hydroxyapatites, in which bone formation is not via a chondrogenic phase, but is rather intramembranous, without expression of type II collagen mRNA. In the same animals, however, 10 and 100 microg of the recombinant morphogen delivered by identical carriers (collagenous matrix and sintered hydroxyapatite) failed to heal calvarial defects. Thus in the primate, TGF-betas themselves are inducers of endochondral bone

formation, although the present data strongly indicate that the bone inductive activity of hTGF-beta2 is site and tissue specific, since a single application of hTGF-beta2, or hTGF-beta1 in previously published experiments, did not induce bone in calvarial defects, but did induce endochondral bone differentiation in heterotopic sites.

L3 ANSWER 4 OF 9 MEDLINE DUPLICATE 4
ACCESSION NUMBER: 2000225398 MEDLINE
DOCUMENT NUMBER: 20225398 PubMed ID: 10760748
TITLE: Osteogenic protein-1, a bone morphogenetic protein, induces **angiogenesis** in the chick chorioallantoic membrane and synergizes with basic fibroblast growth factor and transforming growth factor-beta1.
AUTHOR: Ramoshebi L N; Ripamonti U
CORPORATE SOURCE: Bone Research Laboratory, Medical Research Council/University of the Witwatersrand, Medical School, Johannesburg 2193, South Africa.. natr@chiron.wits.ac.za
SOURCE: ANATOMICAL RECORD, (2000 May 1) 259 (1) 97-107. Journal code: 0370540. ISSN: 0003-276X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200006
ENTRY DATE: Entered STN: 20000706
Last Updated on STN: 20000706
Entered Medline: 20000623

AB Capillary invasion is a vital regulatory signal during bone morphogenesis that is influenced by **angiogenic** molecules such as fibroblast growth factor (FGF) and some members of the transforming growth factor-beta (TGF-beta) superfamily, including TGF-betas themselves. Bone morphogenetic proteins (BMPs), which are members of the TGF-beta superfamily, have previously not been shown to possess direct **angiogenic** properties. Osteogenic protein-1 (**OP-1**; **BMP-7**) is a potent regulator of cartilage and bone differentiation in vivo. The osteogenic and **angiogenic** properties of **OP-1** at both ortho- and heterotopic sites in adult chacma baboons (Papio ursinus) are enhanced synergistically by the simultaneous application of relatively low doses of TGF-beta1. The single application of relatively high doses of TGF-beta1 (20 ng), and bFGF (500 ng) or relatively low (100 ng) and high (1,000 ng) doses of **OP-1** in the chick chorioallantoic membrane (CAM) assay elicited a prominent and (for **OP-1**) dose-dependent **angiogenic** response. The binary application of a relatively low dose of **OP-1** (100 ng) with a relatively low dose of bFGF (100 ng) or with a relatively low (5 ng) or high (20 ng) dose of TGF-beta1 resulted in a synergistic enhancement of the **angiogenic** response. The **angiogenic** effect of the relatively low doses of the combined morphogens was distinctly more pronounced than that of the single application of the relatively high doses of the respective factors.

The present findings suggest that these morphogens may be deployed in binary combination in order to accentuate experimental **angiogenesis**. The cooperative interaction of the different morphogens in the CAM assay may provide important biological clues towards the control of clinical **angiogenesis**.

L3 ANSWER 5 OF 9 MEDLINE DUPLICATE 5
ACCESSION NUMBER: 1999387615 MEDLINE
DOCUMENT NUMBER: 99387615 PubMed ID: 10459859
TITLE: Osteogenic protein-1 increases gene expression of vascular endothelial growth factor in primary cultures of fetal rat calvaria cells.
AUTHOR: Yeh L C; Lee J C
CORPORATE SOURCE: Department of Biochemistry, The University of Texas Health Science Center, San Antonio 78284-7760, USA.. carolyeh@biochem.uthscsa.edu
SOURCE: MOLECULAR AND CELLULAR ENDOCRINOLOGY, (1999 Jul 20) 153 (1-2) 113-24.
Journal code: 7500844. ISSN: 0303-7207.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Space Life Sciences
ENTRY MONTH: 199910
ENTRY DATE: Entered STN: 19991101
Last Updated on STN: 19991101
Entered Medline: 19991020
AB Osteogenic protein-1 (**OP-1** or **BMP-7**) stimulates new bone formation in vivo and induces cell proliferation and differentiation of osteoblasts in vitro. In the present study, we examined effects of **OP-1** on the expression of vascular endothelial growth factor (VEGF) in primary cultures of fetal rat calvaria (FRC) cells. **OP-1** increased the steady-state level of VEGF mRNA by about 3-fold in an **OP-1** concentration- and time-dependent manner. The increase in VEGF mRNA level depended on transcription and was sensitive to cell replication. The VEGF mRNA stability was unaffected. The mRNA levels for both types of VEGF receptors, Flk-1 and Flt-1 were low but detectable in FRC cells by RT-PCR and were not changed by **OP-1**. Inhibition of VEGF synthesis and function by antisense oligonucleotide and by suramin, respectively arrested the **OP-1**-induced alkaline phosphatase activity and mineralized bone nodule formation. Together with published studies of VEGF on vascular endothelial cells which are usually found in close proximity to osteoblastic cells in vivo, these results suggest that VEGF participates in the **OP-1**-induced osteogenesis by taking part in bone cell differentiation and by promoting **angiogenesis** at the site of bone formation.

L3 ANSWER 6 OF 9 MEDLINE DUPLICATE 6
ACCESSION NUMBER: 97078909 MEDLINE
DOCUMENT NUMBER: 97078909 PubMed ID: 8919034
TITLE: Complete regeneration of bone in the baboon by recombinant human osteogenic protein-1 (**hOP-1**, bone morphogenetic protein-7).
AUTHOR: Ripamonti U; Van Den Heever B; Sampath T K; Tucker M M; Rueger D C; Reddi A H
CORPORATE SOURCE: Bone Research Laboratory, Medical Research Council/University of the Witwatersrand, Medical School, Johannesburg, South Africa.. 177RIPA@chiron.witac.za
CONTRACT NUMBER: DE 10712-01 (NIDCR)
SOURCE: GROWTH FACTORS, (1996) 13 (3-4) 273-89,color plates

III-VIII,pre.bk.
Journal code: 9000468. ISSN: 0897-7194.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199703
ENTRY DATE: Entered STN: 19970313
Last Updated on STN: 20000303
Entered Medline: 19970303

AB We examined the efficacy of a single application of recombinant human osteogenic protein-1 (**hOP-1**, bone morphogenetic protein-7) for its ability to regenerate large calvarial defects in adult male baboons (Papio ursinus). Recombinant **hOP-1**, in conjunction with baboon or bovine guanidinium-extracted insoluble collagenous bone matrix (0.1, 0.5 and 2.5 mg per g of collagenous matrix as carrier), was implanted in 46 calvarial defects surgically prepared in 14 baboons, whilst 18 defects were implanted with the carrier matrix without **hOP-1**. Specimens were harvested on d 15, 30, 90 and 365 and subjected to histomorphometry on serial undecalcified sections cut at 7 microm to study the temporal sequence of tissue morphogenesis after the single application of **hOP-1**. Histological analysis indicated that the induction of new bone formation proceeded from the periphery to the central core of **hOP-1** treated specimens after rapid **angiogenesis** and mesenchymal cell migration in apposition to the collagenous matrix. Whilst chondrogenesis was limited, newly formed bone has already filled with fully differentiated bone marrow elements as early as d 15, even with the 0.1 mg dose of **hOP-1**. On d 30 and 90, doses of 0.1 and 0.5 mg of **hOP-1** showed greater amounts of bone than controls, and on d 90, they induced complete regeneration of the defects. Doses of 2.5 mg **hOP-1** per g of matrix induced extensive osteogenesis initially with heterotopic ossification and displacement of the temporalis muscle above the defects. One year after implantation of **hOP-1** there was restoration of the internal and external cortices of the calvaria. These results show that **hOP-1** induces complete regeneration of calvarial bone in the adult primate, and suggest that the optimal activity of **hOP-1** to achieve regeneration is between 100 and 500 microg of **hOP-1** per g of matrix. These results in the primate may form the scientific basis for future clinical applications of **hOP-1**.

L3 ANSWER 7 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)
ACCESSION NUMBER: 96:806077 SCISEARCH
THE GENUINE ARTICLE: VP916
TITLE: COMPLETE REGENERATION OF BONE IN THE BABOON BY RECOMBINANT HUMAN OSTEOGENIC PROTEIN-1 (**HOP-1**, BONE MORPHOGENETIC PROTEIN-7)
AUTHOR: RIPAMONTI U (Reprint); VANDENHEEVER B; SAMPATH T K; TUCKER M M; RUEGER D C; REDDI A H
CORPORATE SOURCE: UNIV WITWATERSRAND, MRC, SCH MED, BONE RES LAB, 7 YORK RD, ZA-2193 PARKTOWN, JOHANNESBURG, SOUTH AFRICA (Reprint); CREAT BIOMOL, HOPKINTON, MA, 01748; JOHNS HOPKINS UNIV, SCH MED, DEPT ORTHOPAED SURG, LAB MUSCULOSKELETAL CELL BIOL, BALTIMORE, MD, 21205

COUNTRY OF AUTHOR: SOUTH AFRICA; USA
SOURCE: GROWTH FACTORS, (1996) Vol. 13, No. 3-4, pp. 273.
ISSN: 0897-7194.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 37

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We examined the efficacy of a single application of recombinant human osteogenic protein-1 (**hOP-1**, bone morphogenetic protein-7) for its ability to regenerate large calvarial defects in adult male baboons (Papio ursinus). Recombinant **hOP-1**, in conjunction with baboon or bovine guanidinium-extracted insoluble collagenous bone matrix (0.1, 0.5 and 2.5 mg per g of collagenous matrix as carrier), was implanted in 46 calvarial defects surgically prepared in 14 baboons, whilst 18 defects were implanted with the carrier matrix without **hOP-1**. Specimens were harvested on d 15, 30, 90 and 365 and subjected to histomorphometry on serial undecalcified sections cut at 7 mu m to study the temporal sequence of tissue morphogenesis after the single application of **hOP-1**. Histological analysis indicated that the induction of new bone formation proceeded from the periphery to the central core of **hOP-1** treated specimens after rapid **angiogenesis** and mesenchymal cell migration in apposition to the collagenous matrix. Whilst chondrogenesis was limited, newly formed bone has already filled with fully differentiated bone marrow elements as early as d 15, even with the 0.1 mg dose of **hOP-1**. On d 30 and 90, doses of 0.1 and 0.5 mg of **hOP-1** showed greater amounts of bone than controls, and on d 90, they induced complete regeneration of the defects. Doses of 2.5 mg **hOP-1** per g of matrix induced extensive osteogenesis initially with heterotopic ossification and displacement of the temporalis muscle above the defects. One year after implantation of **hOP-1** there was restoration of the internal and external cortices of the calvaria. These results show that **hOP-1** induces complete regeneration of calvarial bone in the adult primate, and suggest that the optimal activity of **hOP-1** to achieve regeneration is between 100 and 500 mu g of **hOP-1** per g of matrix. These results in the primate may form the scientific basis for future clinical applications of **hOP-1**.

L3 ANSWER 8 OF 9 MEDLINE DUPLICATE 7
ACCESSION NUMBER: 94168042 MEDLINE
DOCUMENT NUMBER: 94168042 PubMed ID: 8122519
TITLE: Initiation and promotion of bone differentiation by bone morphogenetic proteins.
AUTHOR: Reddi A H; Cunningham N S
CORPORATE SOURCE: Department of Orthopaedic Surgery, Johns Hopkins University
School of Medicine, Baltimore, Maryland.
SOURCE: JOURNAL OF BONE AND MINERAL RESEARCH, (1993 Dec) 8 Suppl 2 S499-502. Ref: 31
Journal code: 8610640. ISSN: 0884-0431.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Space Life Sciences

ENTRY MONTH: 199404
ENTRY DATE: Entered STN: 19940412
Last Updated on STN: 19970203
Entered Medline: 19940407

AB The presence of growth and differentiation factors in bone has been demonstrated by subcutaneous implantation of demineralized bone matrix that initiates new cartilage and bone morphogenesis. The genes for bone morphogenetic proteins (BMPs) have been cloned and expressed. Recombinant BMPs induce endochondral bone formation in vivo. The multistep sequential developmental cascade consists of chemotaxis, mitosis, and differentiation of cartilage and bone. The pleiotropic response has been well characterized. BMPs stimulate osteogenic and chondrogenic phenotypes. Natural bovine osteogenin (BMP-3) and recombinant BMP-4 are equipotent in chemotaxis, limb bud chondrogenesis, cartilage maintenance, and in vivo bone induction. There are multiple isoforms of BMPs, raising the biologic relevance of the redundancy. The mode of action and second messengers are not clear. BMPs appear to have cognate receptors as demonstrated by iodinated BMP-2B (BMP-4). Other novel members of the BMP family include osteogenic protein 1 (**BMP**-7) and osteogenic protein 2 (BMP-8). Bone morphogenetic proteins are members of the transforming growth factor-beta superfamily and include three distinct subfamilies: BMP-2, BMP-3, and **BMP**-7. Native BMP-3 and recombinant BMP-4 bind type IV collagen of the basement membrane. This novel connection may be the long elusive mechanistic explanation for the requirement of **angiogenesis** and vascular invasion for bone morphogenesis. BMPs may have a role in fracture repair, periodontal regeneration, and alveolar ridge augmentation.

L3 ANSWER 9 OF 9 MEDLINE
ACCESSION NUMBER: 91086155 MEDLINE
DOCUMENT NUMBER: 91086155 PubMed ID: 1702089
TITLE: Preoperative versus postoperative irradiation in the prophylaxis of heterotopic bone formation in rats.
AUTHOR: Kantorowitz D A; Miller G J; Ferrara J A; Ibbott G S; Fisher R; Ahrens C R
CORPORATE SOURCE: Division of Radiation Oncology, University of Colorado Health Sciences Center, Denver.
CONTRACT NUMBER: BRS 2030599 (DRS)
BRS6-05357 (DRS)
CA 35533 (NCI)
+
SOURCE: INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY, BIOLOGY, PHYSICS, (1990 Dec) 19 (6) 1431-8.
Journal code: 7603616. ISSN: 0360-3016.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199102
ENTRY DATE: Entered STN: 19910322
Last Updated on STN: 19960129
Entered Medline: 19910201

AB Irradiation treatment, commenced within 1-5 days post-surgery, reliably prophylaxes heterotopic bone formation but is painful and impairs desirable postop immobilization. To compare pre- versus post-op radiation, we bilaterally implanted bone matrix pellets into the thighs of 111 30-day-old Long Evans rats. Rats were randomized to time of radiation initiation (2 days pre-**op**, **1** hr pre-op, or 2 days

post-op) and dose (300, 800, 1800, 2400, or 3000 cGy in 1 fraction). Pellets were removed on post-op day 16 or 48 and evaluated histologically and radiologically. Histologic analysis showed dose-related suppression in bone formation, that is, 40%, 27%, 6.8%, 2.5%, 6.4%, and 0.0% bone formed among sites receiving 0, 300, 800, 1800, 2400, and 3000 cGy, respectively. The difference in bone formation between control and irradiated implant sites was significant at every dose level in all treatment groups (p less than or equal to .03). There was no statistically significant difference in overall bone formation between post-op (7.1%) and 1 hr pre-op (5.3%) groups, whereas 2 day pre-op rats formed significantly more bone (12.6%). Stratified by dose, however, there were no significant differences between treatment groups except at 800 cGy. At this dose, 2 day pre-op rats formed more bone (10.6%) than 1 hr pre-op (6.6%) or post-op (3.3%) groups. Results suggest that a) radiation given shortly prior to a stimulus inducing proliferation among multipotential cells may inhibit subsequent proliferation and/or differentiation, and b) clinical formation of heterotopic bone may be preventable via modest doses of irradiation delivered shortly prior to surgery.

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(FILE 'HOME' ENTERED AT 11:36:19 ON 09 AUG 2002)

FILE 'MEDLINE, CANCERLIT, BIOSIS, EMBASE, SCISEARCH' ENTERED AT 11:36:29 ON 09 AUG 2002

L1 2743 S OP1 OR OP-1 OR HOP1 OR HOP-1 OR BMP7 OR BMP-7
L2 32 S L1 AND (ANGIOGEN? OR NEOVASCU?)
L3 9 DUP REM L2 (23 DUPLICATES REMOVED)

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5942496.pn. and (protein or polypeptide)	1

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JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

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L10	5942496.pn. and (protein or polypeptide)	1	L10
L9	l4 and ($fgf).clm.	8	L9
L8	6211157.pn.	2	L8
L7	621157.pn.	3	L7
L6	L4 and ($fgf)	16	L6
L5	L4 and ($fgf) or (basic same fibroblast)	3175	L5
L4	L3 and (angiogen$ or neovascul$)	22	L4
L3	(op1 or op-1 or hop1 or hop-1 or bmp7 or bmp-7).clm.	173	L3
L2	L1 and (angiogen$ or neovas$)	10	L2
L1	(op1 or op-1 or hop1 or hop-1 or bmp7 or bmp-7).ab.	1308	L1

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